



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/573,348

09/28/2006

Richard Van Der Ark

207,513

8777

7590

05/25/2010

Jay S.Cinamon
abelman, Frayne & Schwab
666 Third Avenue, 10 th Floor
New York, NY 10017

EXAMINER

GWARTNEY, ELIZABETH A

ART UNIT

PAPER NUMBER

1781

MAIL DATE

DELIVERY MODE

05/25/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,348	Applicant(s) VAN DER ARK ET AL.	
	Examiner ELIZABETH GWARTNEY	Art Unit 1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 55-119 is/are pending in the application.
- 4a) Of the above claim(s) 98-108 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 55-97 and 109-119 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20070502</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, Claims 55-97 and 109-119 in the reply filed on February 12, 2010 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 65, 75 and 91 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 65, the recitation "essentially completely water soluble" renders the claim indefinite. It is not clear what water solubility level is encompassed by the phrase "essentially completely."

Regarding claims 75, the recitation "pyrazine derivatives as defined in claim 1" renders the claim indefinite because claim 1 has been cancelled. With regard to the prior art, the phrase "pyrazine derivatives" encompass those defined in claim 55.

Claim 91 recites the limitation "the beverage or foodstuff" in line 2. There is insufficient antecedent basis for this limitation in the claim. Claim 91 is dependent on claim 76 which is directed to a hop containing beverage.

Claim Rejections - 35 USC § 102

Art Unit: 1781

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 55-65, 70 and 73-74 are rejected under 35 U.S.C. 102(b) as being anticipated by Bastin et al. (US 2002/0119939).

Regarding claims 55-65, Bastin et al. disclose a stable aqueous deoxyfructosazine composition comprising 1.0% by weight of dry matter of 2,5,-deoxyfructosazine (Abstract, [0002],[0003], *see* wherein 10 ml of solution contains 100 mg deoxyfructosazine-[0022]-[0032]).

The recitation that said composition can suitably be used as an additive in beverage and foodstuffs does not confer patentability to the claim since the recitation of an intended use does not impart patentability to otherwise old compounds or compositions (MPEP §2111.02 and §2112-§2112.02)

Given Bastin et al. disclose a composition identical to that presently claimed, it is clear that the composition would inherently display an absorption ratio $A_{280/560}$ of at least 250, an A_{280} that exceeds 0.05 and be completely water soluble.

Regarding claims 70, Bastin et al. disclose all of the claim limitations as set forth above. Bastin et al. also disclose that the composition comprises from 1 to 150 mg/ml deoxyfructosazine ([0009]). Therefore, given a composition comprising 100-150 mg/ml deoxyfructosazine, it is clear that the composition would have a solids content of at least 10 wt%.

Regarding claims 73-74, Bastin et al. disclose all of the claim limitations as set forth above. Given Bastin et al. disclose a composition comprising deoxyfructosazine in amounts

Art Unit: 1781

identical to that presently claimed, it is clear that the composition would inherently exhibit a total nitrogen content within the range of 0.1 to 15% by weight of dry matter.

6. Claims 55-58, 65-75 and 109 are rejected under 35 U.S.C. 102(b) as being anticipated by Winter et al. (US 3,702,253).

Regarding claim 55-58 and 65, Winter et al. disclose a flavor agent composition used to alter the flavor of liquid food such as beverages or solid food wherein the composition comprises 2-hydroxymethyl-pyrazine, 2-methoxymethyl-pyrazine, or 2-ethoxymethyl-pyrazine (C1/L25-40, C2/L29-41, C17/L5-25/XIII-Pyrazine ethers and alcohols). Winter et al. disclose that the flavor agent compositions may be added to beverages in varying amounts to alter or to modify the flavor of the beverage (C44/L48-57).

Since Winter et al. disclose a composition comprising 100% of a flavor agent, i.e. 2-hydroxymethyl-pyrazine, 2-methoxymethyl-pyrazine, or 2-ethoxymethyl-pyrazine, it is clear that the composition would comprise at least 1.0% by weight of dry matter of flavor agent.

Given Winter et al. disclose a composition comprising a pyrazine derivative identical to and in quantities presently claimed, it is clear that the composition would exhibit an adsorption ratio $A_{280/560}$ of at least 250 and be completely water soluble.

Regarding claims 66-67 and 70-72, Winter et al. disclose all of the claim limitations as set forth above. Given Winter et al. disclose a composition comprising 100% of 2-hydroxymethyl-pyrazine, 2-methoxymethyl-pyrazine, or 2-ethoxymethyl-pyrazine, it is clear that the composition comprises less than 30% by weight of dry matter of components having a molecular weight in excess of 5 kDa or 30 kDa and that the solids content of the composition would be at least 30 wt%.

Art Unit: 1781

Regarding claims 68-69, Winter et al. disclose all of the claim limitations as set forth above. Given Winter et al. disclose a composition comprising pyrazine derivative, i.e. 2-hydroxymethyl-pyrazine, 2-methoxymethyl-pyrazine, or 2-ethoxymethyl-pyrazine in quantities identical to that presently claimed, inherently the color intensity of the composition at 610 nm does not exceed 0.01.

Regarding claims 73-74, Winter et al. disclose all of the claim limitations as set forth above. Given Winter et al. disclose a composition comprising pyrazine derivative, i.e. 2-hydroxymethyl-pyrazine, 2-methoxymethyl-pyrazine, or 2-ethoxymethyl-pyrazine in quantities identical to that presently claimed, it is clear that inherently the composition would display a total nitrogen content within the range of 0.1 to 15% by weight of dry matter.

Regarding claim 75, Winter et al. disclose all of the claim limitations as set forth above. Winter et al. disclose flavoring food products, either liquid foods, beverages or solid foods (C2/L29-37) with a flavor agent, i.e. 2-hydroxymethyl-pyrazine, 2-methoxymethyl-pyrazine, or 2-ethoxymethyl-pyrazine (C2/L29-37, C17/L5-35, C44/L48-54). Winter et al. disclose that the flavor agent may be used in either liquid or solid form and in quantities designed to give desired results (C2/L37-40). Winter et al. does not disclose a composition containing caramelized material.

Regarding claim 109, Winter et al. disclose all of the claim limitations as set forth above. Given Winter et al. disclose adding a flavor agent identical to that presently claimed, i.e. 2-hydroxymethyl-pyrazine, 2-methoxymethyl-pyrazine, or 2-ethoxymethyl-pyrazine, to liquid foods, beverages or solid foods, it is clear that the resulting beverage or foodstuff would inherently be resistant to light induced flavor changes.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 75-97 and 109-119 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bastin et al. (US 2002/0119939) in view of Agyei-Aye et al. ("The role of the anion in the reaction of reducing sugars with ammonium salts").

Art Unit: 1781

Regarding claims 75-77, 79-86, 91-97 and 109-119, Bastin et al. disclose all of the claim limitations as set forth above. While Bastin et al. disclose making an aqueous *oral* solution by adding 1.0% by weight of dry matter of 2,5,-deoxyfructosazine (Abstract, [0002],[0003], *see* wherein 10 ml of solution contains 100 mg deoxyfructosazine-[0022]-[0032]) to a base of water, flavor and preservative ([0022]-[0032]), the reference does not explicitly disclose wherein deoxyfructosazine or the aqueous composition is introduced into a beverage or foodstuff.

Agyei-Aye et al. teach that it was known to use the reaction products of reducing sugars with ammonia and ammonium salts, including 2,6 deoxyfructosazine, as colorants and flavorants in the food, beverage and tobacco industry (p. 2273/paragraph 1, p. 2274, paragraph 2).

Bastin et al. and Agyei-Aye et al. are combinable because they are concerned with the same field of endeavor, namely edible compositions comprising deoxyfructosazine. It would have been obvious to one of ordinary skill in the art to have used the deoxyfructosazine composition of Bastin et al. in a food or beverage, as taught by Agyei-Aye et al. for the purpose of altering its color and/or flavoring as desired. Further, given Agyei-Aye et al. teaches food and beverages generally, it would have been obvious to have included the composition in any food or beverage, including a hop containing beverage such as green, clear or blue bottled beer exhibiting an EBC color value of less than 15 or 25, and arrive at the present invention.

While modified Bastin et al. disclose a beverage or food stuff comprising deoxyfructosazine, the reference does not explicitly disclose that the content exceeds 5 x EBC color value, is 0.5 or 1.0 mg/kg or is an amount of between 0.01 and 1 wt% or between 0.02 and 0.3 wt%. As flavor intensity and character are variables that can be modified, among others, by adjusting the amount of flavor agent, the precise amount of flavor agent would have been

Art Unit: 1781

considered a result effective variable by one of ordinary skill in the art at the time of the invention. As such, without showing unexpected results, the claimed amount of flavor agent cannot be considered critical. Given the teachings stated above, one of ordinary skill at the time of the invention would have found it obvious to adjust, by routine processing, the amount of flavor agent added to a beverage to obtain the desired flavor intensity and character.

Regarding claim 78 and 87-90, modified Bastin et al. disclose all of the claim limitations as set forth above. Given Bastin et al. disclose a composition comprising deoxyfructosazine in quantities identical to that presently claimed, it is clear that the composition would exhibit an A_{280} that exceeds 0.05 and an absorption ratio $A_{280/560}$ of at least 250.

11. Claims 76-82, 87-97 and 110-112 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winter et al. (US 3,702,253).

Regarding claim 76-82, Winter et al. disclose flavoring food products, either liquid foods, beverages or solid foods (C2/L29-37) with a flavor agent, i.e. 2-hydroxymethyl-pyrazine, 2-methoxymethyl-pyrazine, or 2-ethoxymethyl-pyrazine (C2/L29-37, C17/L5-35, C44/L48-54). Winter et al. disclose that the flavor agent may be used in either liquid or solid form and in quantities designed to give desired results (C2/L37-40). Winter et al. does not disclose a composition containing caramelized material.

Since Winter et al. disclose a composition comprising 100% of a flavor agent, i.e. 2-hydroxymethyl-pyrazine, 2-methoxymethyl-pyrazine, or 2-ethoxymethyl-pyrazine, it is clear that the composition would comprise at least 1.0% by weight of dry matter of flavor agent.

Art Unit: 1781

Given Winter et al. disclose flavoring beverages generally, since hop containing beverages are well known, it would have been obvious to one of ordinary skill in the art to have flavored any beverage, including a hop containing beverage, with the flavor agents disclosed by Winter et al., and arrive at the present invention.

Regarding claims 87-90, Winter et al. disclose all of the claim limitations as set forth above. Given Winter et al. disclose a flavor agent substantially similar to and in quantities identical to that presently claimed, it is clear that the flavor agent would exhibit an A_{280} that exceeds 0.05 and an absorption ratio $A_{280/560}$ of at least 250.

Regarding claims 91-92, Winter et al. disclose all of the claim limitations as set forth above. While Winter et al. disclose that the flavor agents may be added to substances in varying amounts to alter or modify the flavor of the substance, the reference does not explicitly disclose that the flavoring agent is added to a beverage in an amount of between 0.01 and 1 wt% or between 0.02 and 0.3 wt%. As flavor intensity and character are variables that can be modified, among others, by adjusting the amount of flavor agent, the precise amount of flavor agent would have been considered a result effective variable by one of ordinary skill in the art at the time of the invention. As such, without showing unexpected results, the claimed amount of flavor agent cannot be considered critical. Given the teachings stated above, one of ordinary skill at the time of the invention would have found it obvious to adjust, by routine processing, the amount of flavor agent added to a beverage to obtain the desired flavor intensity and character.

Regarding claims 93-97, Winter et al. disclose all of the claim limitations as set forth above. Since it is well known that hop containing beverages are packaged in bottles of varying glass color including green, clear or blue, beer is a hop containing beverage, and beer is made is range of color values, it would have been obvious to one of ordinary skill in the art to have introduced the flavor agent

Art Unit: 1781

into any hop containing beverage, including green, blue and clear bottled beer displaying an EBC color value of less than 25 or 15, and arrive at the present invention.

Regarding claims 110-112, Winter et al. disclose all of the claim limitations as set forth above. Given Winter et al. disclose introducing a flavor agent identical to that presently claimed, i.e. 2-hydroxymethyl-pyrazine, 2-methoxymethyl-pyrazine, or 2-ethoxymethyl-pyrazine to a beverage, it is clear that the beverage would intrinsically exhibit an EBC color value of less than 25 or 15. While Winter et al. disclose that the flavor agents may be added to substances in varying amounts to alter or modify the flavor of the substance, the reference does not explicitly disclose that the flavoring agent is added to a beverage in an amount that exceeds 5 x EBC color value. As flavor intensity and character are variables that can be modified, among others, by adjusting the amount of flavor agent, the precise amount of flavor agent would have been considered a result effective variable by one of ordinary skill in the art at the time of the invention. As such, without showing unexpected results, the claimed amount of flavor agent cannot be considered critical. Given the teachings stated above, one of ordinary skill at the time of the invention would have found it obvious to adjust, by routine processing, the amount of flavor agent added to a beverage to obtain the desired flavor intensity and character.

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re*

Art Unit: 1781

Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 55-56, 58-62, 65-74, 76, 81-86 and 93-94 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 37, 43-51, 54-58 and 92-101 of copending Application No. 10/573,349. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Although the copending claims and the present claims are not identical, there is clear overlap. Specifically ***US Application 10/573, 349*** claims a composition comprising at least 1.0% by weight of dry matter of pyrazine derivatives according to the formula of present claim 55 (claims 37 and 43-44). ***US Application 10/573, 349*** claims where the hydroxyhydrocarbyl residue comprises 1-10 carbon, the pyrazine derivative contains at least two hydroxyhydrocarbyl residues and the composition contains at least 0.3% deoxyfructosazine (claims 45-48). Further, ***US Application 10/573, 349*** claims that the composition is soluble in water, contains less than 30% by weight of dry matter of components having a molecular weight in excess of 30 kDa and in excess of 5 kDa, the solids content of the composition is at least 30 wt% and the total nitrogen content is in the range of 0.1 and 15% by weight of dry matter (claims 49-51 and 54-58). Lastly, ***US Application 10/573, 349*** claims a hop containing beverage bottled in green, clear or blue glass having an EBC color value of less than 15, and comprising at least 1mg/kg of a pyrazine

Art Unit: 1781

derivative according to the formula of present claim 55, (claims 92-101). Therefore, it would have been obvious to one of ordinary skill in the art that the composition of *US Application 10/573, 349* would fall within the composition presently claimed and thereby one of ordinary skill in the art would arrive at the present invention from the copending one.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH GWARTNEY whose telephone number is (571)270-3874. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. G./

Examiner, Art Unit 1781

/Keith D. Hendricks/

Supervisory Patent Examiner, Art Unit 1781